

## **REMARKS**

### **Present Status of the Application**

The Office Action mailed May 17, 2005 rejected all pending claims 1-6. Specifically, claims 2 and 5 were rejected under 35 U.S.C. 112 as being indefinite, claims 1 and 4 were rejected under 35 U.S.C. 102(b) as being anticipated by Lauterbach et al. (US 4,341,816, hereinafter as Lauterbach), and claims 1-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterbach et al. in view of Chiang et al. (US 6,248,401, hereinafter as Chiang). In response thereto, Applicants have amended claims 1, 2, 4, 5 and added new claims 7-8. No new matter adds through the amendment. Reconsideration of claims 1-6 and consideration of new claims 7-8 are respectfully requested.

### **Discussion of Rejection under 35 U.S.C. 112**

Claims 2 and 5 were rejected under 35 U.S.C. 112 as being indefinite. Applicants have amended claims 2 and 5 to more clearly define the invention.

According to Examples 8-9 in Table 1 of the specification and the Periodic Table provided by Examiner, the IVa group elements of this invention certainly refer to titanium (Ti), zirconium (Zr) and hafnium (Hf). Therefore, claims 2 and 5 are amended to list the element names, and withdrawal of the rejections to claims 2 and 5 is respectfully requested.

### **Discussion of Rejection under 35 U.S.C. 102(b)**

Claims 1 and 4 were rejected under 35 U.S.C. 102(b) as being anticipated by Lauterbach. Please note that Applicants have amended claims 1 and 4, while the amendment (a hydrolyzable group) is supported by paragraphs [0014]-[0015] of the specification.

One feature of claims 1 and 4 as amended is that at least one of the target material and the backing plate is coated with a coupling agent of a semi-metal oxide or a metal oxide that *has a hydrolyzable group*. According to paragraphs [0003]-[0009], the coupling agent is used in replacement of the metallization layer of the prior art to save the time and cost for forming the metallization layer.

Lauterbach fails to disclose the above feature, but is similar to the prior art described in the specification of this application because two metallization layers, which include an adhesive layer and a solderable layer as defined in the Abstract and claim 1, are coated with plasma spraying prior to the solder material. Therefore, Lauterbach's invention has the same drawbacks of the prior art as described in paragraphs [0003]-[0004] of the specification of this invention.

Lauterbach also fails to disclose the use of a coupling agent of a semi-metal oxide or a metal oxide that *has a hydrolyzable group*, because the Cu/glass mixture or any other adhesive layer used in Lauterbach does not have a hydrolyzable group. More specifically, Cu is a metal, glass is a semi-metal oxide *without a hydrolyzable group*, and the other adhesive layers are all metals.

For at least the reasons mentioned above, Applicants respectfully submit that independent claims 1 and 4 are not anticipated by and patentably define over Lauterbach.

#### **Discussion of Rejection under 35 U.S.C. 103(a)**

Claims 1-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterbach in view of Chiang. Applicants respectfully traverse the rejections for the reasons set forth.

According to the specification, this invention concerns the bonding *between inorganic materials*. Specifically, the target in claim 1 comprises an *inorganic* target material, and the backing plate usually includes an *inorganic* metallic material like copper, as described in [0002].

However, in Chiang, the coupling agent is used to bond an *inorganic* metallic foil to an *organic* polymeric layer like a PCB substrate, as described in the Background section of Chiang. Since the interface properties between inorganic materials are quite different from those between an inorganic material and an organic material, the field of this invention and Lauterbach is different from that of Chiang. For at least the above reason, one of ordinary skills is not motivated to apply Chiang's invention to Lauterbach to obtain the target of claim 1 or the method of claim 4.

For at least the above reasons, Applicants respectfully submit that independent claims 1 and 4 both patentably define over the prior art.

For at least the same reasons mentioned above, Applicants respectfully submit that claims

2-3 and 5-6 respectively dependent from claims 1 and 4 also patently define over the prior art.

### **Discussion of New Claims 7 and 8**

New claims 7 and 8 can be supported by paragraph [0019]. It is noted that indium (In), indium alloys, tin (Sn) and tin alloys are not used in Lauterbach or Chiang as solder materials.

For at least the above reason and the same reasons provided for claims 1 and 4, Applicants respectfully submit that claims 7 and 8 respectively dependent from claims 1 and 4 also patently define over the prior art.

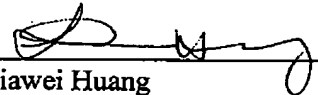
### **CONCLUSION**

For at least the forgoing reasons, it is believed that claims 1-8 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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